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AMENDMENTS TO THE CLAIMS:

A listing of claims depicting present amendments and status (e.g., canceling claim 2 and claim 5 and amending claims 1, 3, 8, 14 and 16) is listed below.

1. (Currently Amended) A semiconductor device, comprising:

a one-conduction type semiconductor substrate;

a one-conduction type semiconductor layer formed on the substrate;

a plurality of first reverse-conduction type semiconductor regions comprising buried reverse-conduction type semiconductor material in trenches having an orthohexagonal shape formed in the semiconductor layer ~~, each designed to have an orthohexagonal shape~~ and formed to be spaced substantially equidistant from one another in the semiconductor layer;

a second reverse-conduction type semiconductor region forming a boundary in the semiconductor layer so as to surround the plurality of first reverse-conduction type semiconductor regions; and

a metal layer forming Schottky junctions in cooperation with the semiconductor layer and surfaces of the first reverse-conduction type semiconductor regions.

2. (Cancelled).

3. (Currently Amended) The semiconductor device according to Claim 1, wherein the first reverse-conduction type semiconductor regions ~~are~~ include diffused regions of reverse-conduction type impurities in the semiconductor layer.

4. (Previously presented) The semiconductor device according to Claim 1, wherein the plurality of first reverse-conduction type semiconductor regions are disposed so as to be spaced from one another at such intervals that the semiconductor layer between neighboring first reverse-conduction type semiconductor regions is fully depleted when reverse voltages are applied.

5. (Cancelled).

6. (Original) The semiconductor device according to Claim 1, wherein the first reverse-conduction type semiconductor regions are formed with a thickness smaller than the thickness of the semiconductor layer.

7. (Original) The semiconductor device according to Claim 1, wherein the second reverse-conduction type semiconductor region is a diffusion region.

8. (Currently Amended) A semiconductor device, comprising:

a one-conduction type semiconductor substrate;

a one-conduction type semiconductor layer formed on the substrate;

a plurality of first reverse-conduction type semiconductor regions, each designed to have an orthohexagonal shape formed to be spaced substantially equidistant from one another in the semiconductor layer;

a second reverse-conduction type semiconductor region forming a boundary in the semiconductor layer so as to surround the plurality of first reverse-conduction type semiconductor regions, ~~The semiconductor device according to Claim 1,~~ wherein the second reverse-conduction type semiconductor

region comprises buried semiconductor material in a plurality of trenches formed in the semiconductor layer; and

a metal layer forming Schottky junctions in cooperation with the semiconductor layer and surfaces of the first reverse-conduction type semiconductor regions.

9. (Withdrawn).

10. (Withdrawn).

11. (Withdrawn).

12. (Withdrawn).

13. (Withdrawn).

14. (Currently Amended) A semiconductor device, comprising:

a one-conduction type semiconductor substrate;

a one-conduction type semiconductor layer formed on the substrate;

at least one reverse-conduction type semiconductor region, each designed to have an orthohexagonal shape ~~formed~~ and buried in at least one trench in the semiconductor layer;

a metal layer forming a Schottky junction area in cooperation with the semiconductor layer and surfaces of the at least one reverse-conduction type semiconductor region; and

said at least one reverse-conduction type semiconductor region being configured such that the semiconductor layer in a Schottky junction area is fully depleted when a reverse voltage is applied.

15. (Previously Presented) The semiconductor device of claim 14, wherein said at least one reverse-conduction type semiconductor region includes: a plurality of first reverse-conduction type semiconductor regions formed in the semiconductor layer; and a second reverse-conduction type semiconductor region forming a boundary in the semiconductor layer so as to surround the plurality of first reverse-conduction type semiconductor regions.

16. (Currently Amended) A semiconductor device, comprising:

a substrate;

a semiconductor layer on the substrate;

a metal layer forming a Schottky junction area in cooperation with the semiconductor layer;

means for fully depleting the semiconductor layer of carriers in the Schottky junction area when a reverse voltage is applied such as to pinch off the semiconductor layer so as to suppress an IR leak current, wherein the means for fully depleting includes: a plurality of first reverse-conduction type semiconductor regions, each designed to have an orthohexagonal shape ~~formed~~ buried in trenches in the semiconductor layer; and a second reverse-conduction type semiconductor region forming a boundary in the semiconductor layer so as to surround the plurality of first reverse-conduction type semiconductor regions.

17. (Previously Cancelled).

18. (New) The semiconductor device of claim 8, wherein said plurality of first reverse-conduction type semiconductor regions comprise buried reverse-conduction type semiconductor material in trenches having an orthohexagonal shape formed in the semiconductor layer.